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10/680,502	10/07/2003	Fabiano Rimediotti	71161	5507
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/680,502	RIMEDIOTTI ET AL.
Examiner	Art Unit	
Richard Bueker	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 26 May 2005.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-38 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-38 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. _____.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____

Claims 9, 10, 12, 13, 18 and 24-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 9, "said surface zone" lacks proper antecedent basis because no previous claim defines a "surface zone". Also in claim 9, "zone" should be "zones". In claim 12, "said zones" lacks proper antecedent basis. In claim 18, "said pair of zones" lacks proper antecedent basis. In claim 24, "said upper two surface zones" and "each said surface zone" lack proper antecedent basis. In claim 26, "said surface zones" lacks proper antecedent basis. In claim 31, "said zones" lacks proper antecedent basis. In claim 33, "said two zones" lacks proper antecedent basis. In claim 28, line 10, the phrase "said longitudinal direction" lacks proper antecedent basis. It is noted that claim 28, line 5 recites "a respective main longitudinal direction", but it is not clear that the said longitudinal direction is the same as the main longitudinal direction. Claim 28 recites "a feeding means for feeding said substrate above said sources, in a feeding direction parallel to said longitudinal direction" (emphasis added), and claim 28 also recites "said sources are arranged with their main longitudinal direction inclined with respect to said direction of feeding of said substrate at an angle other than 0° and 90°" (emphasis added). These two limitations of claim 28 appear to be contradictory. If the longitudinal direction of the sources is inclined to the substrate feeding direction, then it is not parallel to the substrate feeding direction. Applicants are respectfully requested to provide further explanation regarding these limitations. In claim 28, line 16, the phrase "said surface

means' lacks proper antecedent basis, and it is unclear if this phrase refers to the previously recited "first surface means" or "second surface means".

Claims 1-38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification as originally filed did not include the newly added limitation of "enhancing the adhesion of molten metal in a location" which has been added to all of the pending claims.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: even if, for argument's sake, the phrase "enhancing the adhesion of molten metal in a location" were not considered to be new matter as described above, such claim language at least requires antecedent basis in the specification:

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schonherr (5,321,792) taken in view of Achtner (5,788,769), Kleyer I (5,179,622) and DE-970246. Schonherr discloses a vacuum evaporation apparatus for metallizing a strip substrate. It is noted that the Schonherr patent (see col. 1, lines 63-65) incorporates by reference the disclosure of U.S. patent 5,242,500 to Elvers, and therefore the entire disclosure of Elvers is included in the disclosure of Schonherr and is also relied on in this rejection. Elvers is the U.S. equivalent of DE-A-4027034 discussed on pages 2 and 3 of applicants' specification. Schonherr (Fig. 4) discloses the use of a plurality of resistively heated vaporization sources that are heated and fed with a metal wire, which is liquefied and vaporized, each source having a body extending in a main longitudinal direction. A strip substrate is fed over the sources in a feed direction. Schonherr does not discuss the use of sources that have plural pools of molten metal on the surface of each source. Each of the secondary references, however, teach that a resistively heated elongated source having plural pools of molten metal on the surface of the source will provide improved performance in comparison to a resistively heated source having one elongated pool. It would have been obvious to one skilled in the art to substitute a plural pool source of the type taught by the secondary references for each of the single pool sources used in the apparatus of Schonherr, because the secondary references teach that such a substitution would have provided improved vaporizer performance. Regarding claims 8-13, which are product-by-process claims, see MPEP 2113. The sources described in claims 8-13 appear to be identical with or

only slightly different from that disclosed by Achtner, Kleyer I and DE-970246. It is noted that the "plurality of superficial incision lines" (claim 8, for example) reads on a conventional machining step to shape a ceramic or metal body, either prior to or after firing the body to sinter it. A "plurality of superficial incision lines" can be combined together to form a single large cavity.

Claims 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schonherr (5,321,792) taken in view of Achtner (5,788,769), Kleyer I (5,179,622) and DE-970246 for the reasons stated in the preceding paragraph, and taken in further view of Alexander (2,962,538). It would have been obvious to one skilled in the art to provide superficially processed lines in the pool cavities of Achtner, DE-970246 or Kleyer I, because Alexander teaches that superficially processed lines in a boat cavity will desirably improve the surface wettability of the boat cavity. The superficial incision lines recited in claim 27 represent a product-by-process limitation and they appear to be identical with or only slightly different from that disclosed by Alexander. It is noted that the "plurality of superficial incision lines" (claim 8, for example) reads on Alexander's disclosed step (col. 4, lines 10-12) of cutting grooves in a pre-sintered body of ceramic.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schonherr (5,321,792) taken in view of Achtner (5,788,769), Kleyer I (5,179,622), DE-970246 and Alexander (2,962,538) for the reasons stated in the preceding paragraph, and taken in further view of Anderson (3,770,529) (Fig. 2 and col. 3, line 61 to col. 4, line 10), Copley (4,914,270) (col. 1, lines 10-28), Fukushima (6,765,174) (Fig. 1, abstract and col. 9, lines 11-31) or applicants' description of the prior art (page 8, line 32

to page 9, line 10 of applicants' specification). It would have been *prima facie* obvious to form the cavities in the boats of Achtner, DE-970246 or Kleyer I using a laser, because Anderson, Copley, Fukushima and applicants' description of the prior art each teaches that a laser can be used for laser machining a ceramic body into a desired shape. Also, it would have been *prima facie* obvious to form the superficial incision lines of Alexander using a laser, because Anderson, Copley, Fukushima and applicants' description of the prior art each teaches that a laser can be used for laser machining a ceramic body into a desired shape. Regarding applicants' description of the prior art, they state on page 9: "This type of incision machining is known *per se* to persons skilled in the art, but has not been used for the production of this type of sources (sic). The incision lines are typically formed by means of laser machining." It appears that applicants may be intending to say that laser machining was known in the prior art for forming an evaporation source, but has not been used to form "sources" (plural) as disclosed in their specification. Applicants should provide an unambiguous clarification of the meaning of this quoted statement.

Claims 17-20 and 23-27 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Achtner (5,788,769) (Fig. 3). Regarding claims 23-27, which are product-by-process claims, see MPEP 2113. The boat described in claims 24-27 appears to be identical with or only slightly different from that disclosed by Achtner.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Achtner (5,788,769) taken in view of DE-970246 and/or Kleyer I (5,179,622). It

would have been obvious to provide the pools of Achtner with a rectangular shape or flat bottom because DE-970246 and/or Kleyer I teach that evaporation processes can be successfully performed using resistively heated evaporation boats having pool cavities of the claimed shapes.

Claims 17-27 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over DE-970246 (see figs. 1-7) or Kleyer I (5,179,622) (see Figs. 1 and 2).

Claims 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Achtner (5,788,769), DE-970246 or Kleyer I (5,179,622), each taken in view of Alexander (2,962,538). It would have been obvious to one skilled in the art to provide superficially processed lines in the pool cavities of Achtner, DE-970246 or Kleyer I, because Alexander teaches that superficially processed lines in a boat cavity will desirably improve the surface wettability of the boat cavity. The superficial incision lines recited in claim 27 represent a product-by-process limitation and they appear to be identical with or only slightly different from that disclosed by Alexander.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Achtner (5,788,769), DE-970246 or Kleyer I (5,179,622), each one taken in view of Alexander (2,962,538), and taken in further view of Anderson (3,770,529) (Fig. 2 and col. 3, line 61 to col. 4, line 10), Copley (4,914,270) (col. 1, lines 10-28), Fukushima (6,765,174) (Fig. 1, abstract and col. 9, lines 11-31), or applicants' description of the prior art (page 8, line 32 to page 9, line 10). It would have been prima facie obvious to form the cavities in the boats of Achtner, DE-970246 or Kleyer I using a laser, because Anderson, Copley,

Fukushima and applicants' description of the prior art each teaches that a laser can be used for laser machining a ceramic body into a desired shape. Also, it would have been *prima facie* obvious to form the superficial incision lines of Alexander using a laser, because Anderson, Copley, Fukushima and applicants' description of the prior art each teaches that a laser can be used for laser machining a ceramic body into a desired shape. Regarding applicants' description of the prior art, they state on page 9: "This type of incision machining is known *per se* to persons skilled in the art, but has not been used for the production of this type of sources (sic).. The incision lines are typically formed by means of laser machining." It appears that applicants may be intending to say that laser machining was known in the prior art for forming an evaporation source, but has not been used to form "sources" (plural) as disclosed in their specification. Applicants should provide an unambiguous clarification of the meaning of this quoted statement.

Claims 28-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleyer II (5,198,032) in view of Yamaji (JP 1-219157) or Schonherr (5,321,792) and in further view of Achtner (5,788,769), Kleyer I (5,179,622) and DE-970246. Kleyer II (Fig. 1) discloses a vacuum vaporization plant in which a web-like substrate is passed over at least one crucible, said crucible having a main longitudinal direction. The "feeding direction" of the web-like substrate is along the surface of rotating coating roller 18. It can be seen from Fig. 1 of Kleyer II that this feeding direction includes a direction of feeding that is inclined with respect to the main longitudinal direction of the crucible. Yamaji (Fig. 1) and Schonherr are cited to show that it was known in the art to provide

plural aligned crucibles to coat a moving web substrate. It would have been obvious to one skilled in the art to use plural crucibles in the apparatus of Kleyer II because Yamaji and Schonherr teach that a moving web can be coated desirably more uniformly using plural crucibles.

Kleyer II does not discuss the use of sources that have plural pools of molten metal on the surface of each source. Each of Achtner, Kleyer I and DE-970246, however, teach that a resistively heated elongated source having plural pools of molten metal on the surface of the source will provide improved performance in comparison to a resistively heated source having one elongated pool. It would have been obvious to one skilled in the art to substitute a plural pool source of the type taught by the secondary references for each of the single pool sources used in the apparatus of Kleyer II, Yamaji or Schonherr, because Achtner, Kleyer I and DE-970246 teach that such a substitution would have provided improved vaporizer performance. Regarding claims 32-35, which are product-by-process claims, see MPEP 2113. The sources described in claims 8-13 appear to be identical with or only slightly different from that disclosed by Achtner, Kleyer I and DE-970246. It is noted that the "plurality of superficial incision lines" (claim 8, for example) reads on a conventional machining step to shape a ceramic or metal body, either prior to or after firing the body to sinter it. A "plurality of superficial incision lines" can be combined together to form a single large cavity.

Claims 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleyer II (5,198,032) in view of Yamaji (JP 1-219157) or Schonherr (5,321,792) and in

further view of Achtner (5,788,769), Kleyer I (5,179,622) and DE-970246 for the reasons stated in the preceding paragraph rejection, and taken in further view of Alexander (2,962,538). It would have been obvious to one skilled in the art to provide superficially processed lines in the pool cavities of Achtner, DE-970246 or Kleyer I, because Alexander teaches that superficially processed lines in a boat cavity will desirably improve the surface wettability of the boat cavity. The superficial incision lines recited in claim 27 represent a product-by-process limitation and they appear to be identical with or only slightly different from that disclosed by Alexander. It is noted that the "plurality of superficial incision lines" (claim 8, for example) reads on Alexander's disclosed step (col. 4, lines 10-12) of cutting grooves in a pre-sintered body of ceramic.

Applicants' arguments regarding the Achtner reference have been considered but are not convincing. Achtner clearly teaches (see the abstract) that there are individual areas for melting (i.e. the areas labeled 11, 11', etc. in Fig. 3 of Achtner) "where wire is fed for melting" (emphasis added) in each individual area. One skilled in the art would clearly understand that Achtner is referring to the continuous wire feeding that is conventional in the art. It is noted also that Achtner's description of his inventive evaporator is to be interpreted in light of his description of the background of the invention (see col. 1, line 4 to col. 2, line 19) in which he makes clear that his evaporator is for use in apparatus designed for continuous coating of strip shaped substrates (see col. 1, lines 15-17, for example).

Applicants have argued that Kleyer connects two vaporization boats together, and that Kleyer fails to disclose a single source with separate pools of molten metal. It is

noted, however, that the evaporators of Kleyer are clamped together to form a single body, and Kleyer's evaporation source therefore comprises "a body extending along a main longitudinal direction and including a first surface means and a second surface means" as recited in claim 1, for example.

Applicants have argued that Portner (DE 970246) does not use a continuous metal wire feeder to supply his separate molten metal pools. It is noted, however, that Achtner and Kleyer I (5,179,622) both teach the use of a continuous metal wire feeder to supply separate molten metal pools in a vaporizer boat. It would have been obvious in view of these references to modify Portner's apparatus for continuous operation by providing it with a continuous metal wire feeder to separately supply the separate molten metal pools.

Applicants have also argued that Portner's vaporization source is arranged transversely to the direction in which the substrate is fed. First, it is noted that claims 1-13 do not include any limitation relating the longitudinal direction of the vaporization sources to the feeding direction of the substrate. Secondly, claims 14-16 also do not include any limitation relating the longitudinal direction of the vaporization sources to the feeding direction of the substrate. Instead, claim 14 recites "an alignment transverse to the direction in which the substrate is fed" (emphasis added), while claim 28 recites "an alignment substantially perpendicular to said feeding position" (emphasis added). Thus, these claims recite that an alignment of vaporization sources is transverse or perpendicular to a substrate feed direction, but the claims do not recite that the longitudinal axis of the vaporization sources is transverse or perpendicular to the

feeding direction of the substrate. The recited alignment does not require that the longitudinal axis of elongated vaporization sources be transverse to the feeding direction of the substrate. It is noted that the dictionary definition of the noun "alignment" includes "the condition of being in satisfactory adjustment or of having the parts in proper relative position". Portner (see page 4, lines 6-10) teaches that plural vaporizers of the type shown in Fig. 3 and be arranged side by side. Such an "arrangement" can also be termed an "alignment". The alignment composed of plural Fig. 3 vaporizers would extend transversely to the direction of movement of the substrate.

Furthermore, even if the claims were written to be commensurate in scope with applicants' arguments, it is noted that Portner's Fig. 7 illustrates the fact that a plurality of elongated vaporization sources can be positioned obliquely to form a vaporizer array that will uniformly deposit the desired coating. At page 4, lines 11-19 of the attached translation, Portner states that "(t)he achievement of a layer thickness that is uniform over the entire breadth of a strip is also solvable by constructing the vaporizer's chambers in the form of obliquely progressing slot-shaped recesses f, or similar configurations, as shown in Fig. 7". This teaching makes clear to one skilled in the art that the oblique positioning of Fig. 7 of Portner can be used as a successful alternative to the vaporizer array shown in Fig. 4 of Schonherr.

It is noted that claims 17 and 19 make reference to a longitudinal direction of a source being parallel to an advancement direction of a substrate, but only in terms of an

intended use of the source. Neither the substrate nor the means of moving the substrate are positively recited in these claims.

Applicants have argued that Portner (DE 970246) is not combinable with Schonherr. It is noted, however, that both Portner and Schonherr are directed to the same art which is vacuum evaporation coating of a running length substrate. Figs. 6 and 7 of Portner are both analogous to the Fig. 4 apparatus of Schonherr.

Applicants have argued that Alexander (2,962,538) does not suggest incisions which are shaped and distributed to define two separate surface portions having high wettability. It is noted, however, that Alexander does teach (see paragraph bridging cols. 2 and 3) that the wettability of an evaporation source can be enhanced by forming superficial incisions on the bottom of a cavity which holds the molten metal. It clearly would have been obvious to apply this teaching of Alexander to each of the cavities of Achtner, Kleyer I (5,179,622) and Portner to desirably improve the wettability of each of the molten metal containing cavities of these references. Applicants' claims as written do not in any way distinguish over Alexander's incisions for increasing wettability.

Applicants have argued that the only prior art reference which actually discloses a single source having separate depressions is Portner. It is noted, however, that both Achtner and Kleyer I also disclose sources having a body which is provided with separate depressions.

Applicants' arguments include the use of the terms "machine direction" and "cross machine direction" (see page 25, lines 1-3 of the response for example). It is noted, however, that these terms are not used in either the specification or the claims. For the

sake of clarity, consistency and legal accuracy, applicants' arguments should instead be couched in the same terminology as that used in the claims. At page 25, lines 14 and 15 of the response, applicants define "machine direction" as "the direction of a vertical plane arranged parallel to the web path". It is noted, however, that a plane does not have a single direction, because a plane extends infinitely in an infinite number of directions. Regardless of the definition of "machine direction", it is noted again the this terminology is not in the specification or claims.

Kleyer II (5,198,032) is the primary reference in the rejection of claims 28-38. In Kleyer II the "feeding direction" of the web-like substrate is along the surface of rotating coating roller 18. This feeding direction along the roller 18 includes a direction that is parallel to a longitudinal direction of the vapor boats. Furthermore, as can be seen from Fig. 1 of Kleyer II, the feeding direction along the roller 18 also includes a direction of feeding that is inclined with respect to the main longitudinal direction of the crucible. The feeding direction along the roller 18 meets the claim limitations that applicant has included in claim 28 with respect to the feeding direction of the substrate relative to the position of the evaporation sources. Applicants' arguments to the contrary have been considered but are not convincing. It is noted also that claim 28 as written is unclear and indefinite for the reasons stated in the rejection under 35 U.S.C. 112, second paragraph above. Also, as noted previously above, Portner (see Fig. 7 and page 4, lines 11-19 of the translation) makes obvious the use of a plurality of obliquely positioned elongated vaporizers.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Bueker whose telephone number is (571) 272-1431. The examiner can normally be reached on 9 AM - 5:30 PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parvis Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Richard Bueker
Richard Bueker
Primary Examiner
Art Unit 1763